GENERIC NAME: **TOTAL PARENTERAL NUTRITION**

BRAND NAME: Amigen, Aminosol, FreAmine, Hyprotigan C, etc.
CLASS: Intravenous Hyperalimentation

Indications:

Patients with long-term needs for intravenous feeding, who cannot receive nutrients adequate enough to meet physiologic needs through the gastrointestinal system, including hypercatabolic states (burns, trauma, sepsis, etc.), various gastrointestinal diseases, renal failure, pancreatitis, etc.

Field use:

Inter-facility transport only.

Route of administration:

Administered through a central venous line, either subclavian, internal jugular, or a peripherally inserted central venous line (PICC line) for dextrose concentrations >10%. Dextrose solutions <10% may be given by a standard peripheral line.

Adult and pediatric dose:

Each container of solution is individually formulated for a specific patient. This medication must be transported on an infusion pump, and the indicated drip rate must be carefully observed.

Adverse reactions:

Adverse reactions are related to TPN's components:

Water--fluid overload
Insulin and dextrose--hypoglycemia or hyperglycemia
Heparin--hemorrhage
Electrolytes--abnormal levels of sodium, chloride, potassium, magnesium
Vitamins--deficiency in vitamin D, excess of vitamin A
Dextrose--respiratory distress, liver dysfunction

A partial list of symptoms caused by the above: body swelling, respiratory distress, high or low blood glucose, bleeding, changes in level of consciousness, cardiac arrhythmias, diaphoresis, confusion, lethargy, headache, hunger, tremors, fever, sepsis. Should a problem develop during transport, contact medical control for direction.

Administration notes:

Total parenteral nutrition (TPN) is an individualized mixture of dextrose (15% to 35%), crystalline amino acids (2.5% to 5.0%), electrolytes, water, vitamins, trace elements, and may include insulin, heparin, an H_2 antagonist (cimetidine or ranitidine), antibiotics or fat emulsions (lipids).

TPN may be administered with a separate fat emulsion (looks like milk) flowing on a Y-site distal to the infusion pump, or on a peripheral line. Prior to paramedic transport, the separate fat emulsion infusion should be turned off with the tubing roller clamp, but not removed from the tubing Y-site attachment.

Paramedics may transport patients receiving other medications contained within the TPN solution that are usual and normal components of TPN and are in usual and normal concentrations in the solution.

Strict aseptic precautions are observed in preparing TPN mixtures using a filtered-air, laminar flow hood to avoid bacterial contamination--the high sugar content of these products supports prolific bacterial growth. Sepsis is a potentially severe patient problem.

When patients are removed from an infusion pump in the transferring facility and placed on the transport infusion pump, the procedure is accomplished quickly to avoid buildup of potentially harmful organisms at the IV-tubing connection site. All tubing connections should be taped to avoid separation and consequent contamination. Dressing changes at the catheter insertion site require sterile technique, and are best done at the transferring agency prior to transport.

No TPN solution should be abruptly discontinued, but should the solution be entirely consumed or need to be removed during transport, dextrose 10% should be administrated in place of the TPN to avoid rebound hypoglycemia.

Never exceed the prescribed rate of infusion. Do not attempt to "catch up" if the infusion falls behind schedule.

Particulate matter in clear TPN solutions or visible separation of oil droplets in lipid-containing solutions indicate the solution should be immediately replaced.